

Claims

1. A method for mass producing cooked eggs, the method comprising:
depositing an egg product into a plurality of molds, wherein the molds
have irregular shaped peripheral boundaries;
5 cooking the deposited egg products in the molds;
removing the cooked egg products from the molds; and
cooling the cooked egg products below room temperature.
2. A method as in claim 1, in which the egg product includes whole eggs, in
which the depositing includes depositing the whole eggs.
- 10 3. A method as in claim 1, in which the egg product includes whole eggs
having intact yolks, in which the depositing includes depositing the whole eggs
having intact yolks.
4. A method as in claim 1, in which the egg product includes whole eggs
having essentially all intact yolks, in which the depositing includes depositing the
15 whole eggs having essentially all intact yolks.
5. A method as in claim 1, in which the egg product includes eggs having
broken yolks, in which the depositing includes depositing the eggs having broken
yolks.
6. A method as in claim 1, in which the egg product includes whole eggs
20 having broken yolks, in which the depositing includes depositing the whole eggs
having broken yolks.
7. A method as in claim 6, further comprising breaking the yolks.
8. A method as in claim 6, further comprising breaking the yolks by allowing
the whole eggs to drop through a device for rupturing the egg yolk sac.

-23-

9. A method as in claim 6, in which the method includes dropping the eggs through an egg yolk sac rupturing orifice having sharp edges for rupturing the egg yolk sac.

10. A method as in claim 6, in which the method includes dropping the eggs
5 through a plate having an orifice having sharp inwardly protruding edges.

11. A method as in claim 8, in which the method includes allowing the eggs having broken yolks to fall into the molds.

12. A method as in claim 1, in which the molds are arranged side to side along a width dimension and end to end along a length dimension, in which the
10 depositing includes depositing a plurality of eggs along the width into the plurality of molds at substantially the same time.

13. A method as in claim 12, in which the depositing includes depositing the plurality of eggs along the width while the molds are moving along the length dimension.

15 14. A method as in claim 1, in which the method includes breaking the egg shells while the whole eggs are spaced a first distance apart from each other, followed by diverting the broken egg contents in the width dimension to a second distance apart from each other to drop into the molds.

15. A method as in claim 14, further comprising breaking the yolks by allowing
20 the whole eggs to drop through a device for rupturing the egg yolk sac.

16. A method as in claim 14, in which the method includes dropping the eggs through a egg yolk sac rupturing orifice having sharp edges for rupturing the egg yolk sac.

-24-

17. A method as in claim 14, in which the method includes dropping the eggs through a plate having an orifice having sharp inwardly protruding edges.
18. A method as in claim 1, wherein the molds have a first depression and a second depression disposed within the first depression, wherein the depositing
5 includes depositing the egg products into the first and second depressions.
19. A method as in claim 18, wherein the egg product includes whole eggs having intact yolks, wherein the depositing includes depositing the whole eggs and allowing the yolks to settle into the second depression.
20. A method as in claim 18, wherein the molds include a bottom surface
10 having a depth that varies irregularly over the bottom surface.
21. A method for breaking egg yolks comprising:
dropping the egg yolks through a device for rupturing the egg yolk sacs.
22. A method as in claim 21, in which the device includes an orifice having sharp edges, and in which the method includes dropping the egg yolks through
15 the orifice having sharp edges.
23. A method as in claim 21, in which the device includes a plate having an orifice having sharp inwardly protruding edges, and in which the method includes dropping the egg yolks through the orifice having sharp edges.
24. A method as in claim 22, in which the device has a plurality of orifices and
20 can receive a plurality of egg yolks simultaneously.
25. A method as in claim 22, in which the device has a plurality of orifices arranged in a side by side pattern.
26. A method as in claim 23, in which the device has a plurality of orifices each disposed in a downwardly extending plate portion.

-25-

27. An egg mold for producing eggs having irregular shaped peripheries comprising:

a planar surface having a depression therein, wherein the depression has an irregular shaped outline.

5 28. An egg mold as in claim 27, in which the depression outline is asymmetric about any vertical plane drawn through the planar surface and the depression.

29. An egg mold as in claim 27, in which the planar surface is formed of a non-stick, food grade material.

10 30. An egg mold as in claim 27 having a plurality of depressions in the planar surface.

31. An egg mold as in claim 27, in which the depression has a flat bottom.

32. An egg mold as in claim 27, in which the depression has upwardly and outwardly beveled edges.

15 33. An egg mold as in claim 27, wherein the molds include a bottom surface having an irregularly varying depth over the bottom surface.

34. An egg mold as in claim 27, wherein the depression includes a first depression and a second depression disposed within the first depression.

35. A device for depositing cracked, liquid whole eggs comprising:

20 an egg breaking device comprising a plurality of vertically oriented egg carrying carousels, wherein the egg carrying carousels each have a plurality of egg carriers rotatably disposed around a horizontal axis, further comprising an egg shell breaking knife for breaking the egg shells while in the egg carriers, further comprising an egg yolk breaking device disposed under a portion of each carousel.

-26-

36. A device as in claim 35, in which the egg yolk breaking device includes a plate having a depression having an orifice with sharp edges for rupturing the egg yolk sac.

37. A device as in claim 35, in which the egg yolk breaking device has an
5 orifice for receiving a falling liquid whole egg and having sharp edges for rupturing the egg yolk sac of the falling egg yolk.

38. A device as in claim 35, further comprising a belt having a length dimension and a width dimension adapted to move in the length dimension, in which the belt includes a plurality of egg molds including a plurality of egg
10 receiving depressions oriented along the width dimension, in which the mold depressions have an irregular shaped outline.

39. A device for cooking cracked, liquid whole eggs comprising:
an egg breaking device comprising a plurality of vertically oriented egg carrying carousels, wherein the egg carrying carousels each have a plurality of
15 egg carriers rotating around a horizontal axis, further comprising an egg shell breaking knife for breaking the egg shells while in the egg carriers; and

a conveyor having a length dimension and a width dimension adapted to move in the length dimension, in which the conveyor includes a plurality of egg molds including a plurality of egg receiving depressions oriented along the width
20 dimension, wherein the conveyor is disposed under the egg breaking device to capture falling liquid egg from the egg breaking device.

40. A device as in claim 39, further comprising a cooking oven to receive the moving conveyor having the egg in the conveyor depressions.

-27-

41. A device as in claim 39, in which the depressions have an irregular shaped outline.
42. A device as in claim 39, further comprising an egg yolk breaking device disposed between the egg breaking device and the mold depressions to break
5 the egg yolks.
43. A device as in claim 39, further comprising egg delectors disposed between the egg breaking device and the mold depressions to deflect falling liquid eggs laterally to fall into the mold depressions.
44. A device as in claim 42, in which the egg yolk breaking device includes a
10 plate having a depression having an orifice with sharp edges for rupturing the egg yolk sac.
45. A device as in claim 42, in which the egg yolk breaking device has an orifice for receiving a falling liquid whole egg and having sharp edges for rupturing the egg yolk sac of the falling egg yolk.
- 15 46. A cooked, cooled egg product comprising:
a plurality of cooked egg products having an irregular shaped outline, in which a substantial portion of the eggs have the same irregular shaped outline, in which the cooked egg products have a temperature of less than 30 degrees Centigrade.
- 20 47. A cooked egg product as in claim 46, in which the eggs are essentially all whole cooked eggs having intact yolks.
48. A cooked egg product as in claim 46, in which the eggs are essentially all whole cooked eggs having broken yolks.

-28-

49. A cooked egg product as in claim 46, in which the eggs are cooked scrambled eggs.
50. A cooked egg product as in claim 46, in which the eggs are cooked formulated egg products.
- 5 51. A cooked egg product as in claim 46, having a substantially planar bottom shape.
52. A cooked egg product as in claim 46, in which the plurality of egg products have an irregularly shaped surface having a height which varies irregularly over the surface, in which a substantial portion of the eggs have the same irregularly
- 10 shaped surface.
53. A cooked egg product as in claim 46, having a raised height yolk portion surrounded by a lower height egg white portion.
54. A cooked egg product as in claim 53, in which the yolk is a formulated yolk.
- 15 55. A method for mass producing cooked eggs, the method comprising:
depositing egg products having yolks into a plurality of molds, wherein the molds have a first depression and a second depression disposed with the first depression;
allowing the yolks to settle into the second depression;
20 cooking the deposited egg products in the molds;
removing the cooked egg products from the molds; and
cooling the cooked egg products below 30 degrees Celsius.
56. A method as in claim 55, in which the egg product includes whole eggs, in which the depositing includes depositing the whole eggs.

-29-

57. A method as in claim 55, in which the egg product includes whole eggs having intact yolks, in which the depositing includes depositing the whole eggs having intact yolks.
58. A method as in claim 55, in which the egg product includes formulated
5 eggs and the yolks are formulated yolks, in which the depositing includes depositing the formulated yolks into the second depression.
59. A method for making cooked whole eggs, the method comprising:
mechanically conveying a plurality of whole eggs, the eggs having a shell and egg contents including an egg yolk and an egg white;
10 mechanically breaking the conveyed plurality of egg shells;
allowing the egg contents to fall into a plurality of molds;
mechanically conveying the molds containing the egg contents into a heating area; and
cooking the egg contents in the molds.
- 15 60. A method as in claim 59, in which the mechanically egg conveying, egg breaking, and mold conveying include mechanisms selected from the group consisting of pneumatic, electrical, magnetic, hydraulic, purely mechanical, and electro-mechanical mechanisms and combinations thereof.
61. A method as in claim 59, in which the mechanically conveying includes
20 mechanically carrying each egg in an egg carrier.
62. A method as in claim 59, in which the egg shell mechanical breaking includes breaking the egg shell with a knife.

-30-

63. A method as in claim 59, in which the molds are joined together into a closed loop of linked molds, and in which the mold conveying includes moving the loop having the molds toward the heating area.

64. A method as in claim 59, in which the molds have an irregular shaped outline, such that cooked eggs have a resulting irregular shaped outline.

65. A method as in claim 59, in which the molds have an irregular shaped bottom surface, such that the cooked eggs have a resulting irregular shaped surface.

66. A method as in claim 59, in which the molds have a first depression and a second depression located within the first depression further comprising disposing the egg yolks in the second depression.

67. A method as in claim 59, in which the molds have a symmetrical outline, such that the cooked eggs have a symmetrical outline.

68. A method as in claim 59, in which the molds have a rounded outline, such that the cooked eggs have a rounded outline.

69. A method as in claim 59, further comprising breaking the yolks of substantially all of the eggs.

70. A method as in claim 69, in which the yolk breaking includes allowing the yolk to fall through a sharp device for rupturing the egg yolk sac.

71. A method for making cooked whole eggs having an egg shell and egg contents including egg yolk and egg white, the method comprising:

automatically conveying whole eggs to an egg breaking location;

automatically breaking the egg shells of the whole eggs;

allowing the contents of one whole egg to fall into one mold;

-31-

automatically conveying each mold into a heating area; and
cooking the egg contents in each mold in the heating area.